



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:  
**22.03.2000 Bulletin 2000/12**

(51) Int Cl.7: **A61F 2/06**

(43) Date of publication A2:  
**14.07.1999 Bulletin 1999/28**

(21) Application number: **99300134.6**

(22) Date of filing: **08.01.1999**

(84) Designated Contracting States:  
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU**  
**MC NL PT SE**  
 Designated Extension States:  
**AL LT LV MK RO SI**

(72) Inventors:  
 • Mathis, Mark  
**Fremont, CA 94539 (US)**  
 • Duerig, Thomas  
**Fremont, CA 94539 (US)**

(30) Priority: **09.01.1998 US 5401**

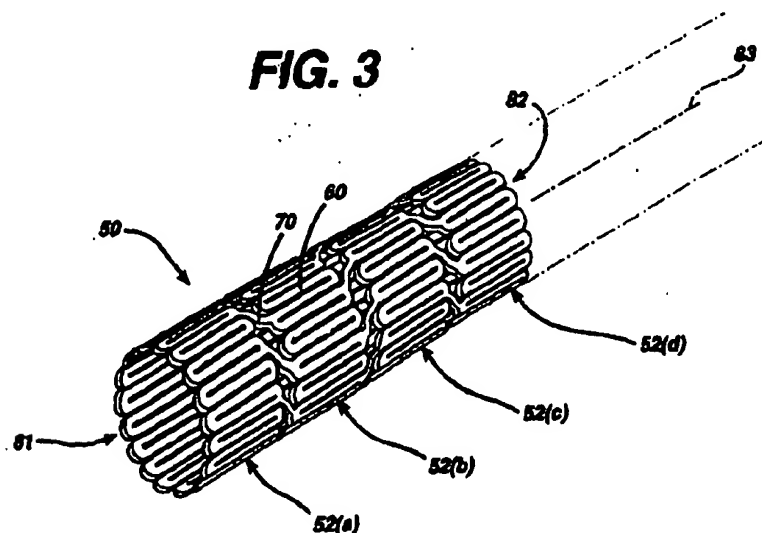
(74) Representative: **Mercer, Christopher Paul**  
**Carpmaels & Ransford**  
**43, Bloomsbury Square**  
**London WC1A 2RA (GB)**

(71) Applicant: **Nitinol Development Corporation**  
**Fremont, California 94539 (US)**

(54) **An intravascular stent having an improved strut configuration**

(57) In accordance with the present invention, there is provided a stent for insertion into a vessel of a patient the stent is a tubular member with a predetermined a thickness. The member has front and back open ends and a longitudinal axis extending therebetween. The stent has a first smaller diameter for insertion into the vessel, and a second larger diameter for deployment into the vessel. The tubular member includes a plurality

of adjacent hoops extending between the front and back ends. The hoops are made from a plurality of longitudinal struts and a plurality of loops connecting adjacent struts. The member further includes a plurality of bridges connecting adjacent hoops to one another. The individual struts have lengths, as measured parallel to the longitudinal axis. The stent is constructed so that the ratio of the number of struts per hoop to the length of a strut, as measured in inches, is greater than about 400.





European Patent  
Office

# EUROPEAN SEARCH REPORT

Application Number  
EP 99 30 0134

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	WO 97 40783 A (JANG G DAVID) 6 November 1997 (1997-11-06) * figures 5,9 * * page 8, line 23 - page 10, line 6 * * page 11, line 26 - line 30 * * page 16, line 19 - line 30 * * page 28, line 9 - line 18 *	1,2,7,8	A61F2/06
Y	---	9	
Y,P	FR 2 764 794 A (NYCOMED LAB SA) 24 December 1998 (1998-12-24) * figures 1,2,2A * * page 4, line 6 - page 7, line 22 *	9	
X,P	WO 98 40035 A (UNITED STATES SURGICAL CORP) 17 September 1998 (1998-09-17) * figures 1,3-5 * * page 6, line 24 - page 7, line 3 * * page 8, line 10 - page 9, line 27 * * page 11, line 23 - page 13, line 21 * * page 14, line 9 - line 20 *	1-4,7	
Y	---	6	TECHNICAL FIELDS SEARCHED (Int.Cl.6)
Y,P	EP 0 884 029 A (BECKER GARY J) 16 December 1998 (1998-12-16) * figures 1,3,6 * * column 9, line 44 - column 12, line 45 *	6	A61F
E	EP 0 928 606 A (NITINOL DEV CORP) 14 July 1999 (1999-07-14) * the whole document *	1-8	
The present search report has been drawn up for all claims			
Place of search <b>THE HAGUE</b>		Date of completion of the search <b>28 January 2000</b>	Examiner <b>Mary, C</b>
<p><b>CATEGORY OF CITED DOCUMENTS</b></p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons</p> <p>&amp; : member of the same patent family, corresponding document</p>			

EPO FORM 1503 03 02 (Pct/C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 99 30 0134

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
The members are as contained in the European Patent Office EDP file on  
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

28-01-2000

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9740783	A	06-11-1997	US 5954743 A	21-09-1999
			US 5922021 A	13-07-1999
			AU 2678297 A	19-11-1997
			AU 2678397 A	19-11-1997
			AU 2806097 A	19-11-1997
			AU 2813597 A	19-11-1997
			AU 3115897 A	19-11-1997
			CA 2252591 A	06-11-1997
			CA 2252593 A	06-11-1997
			CA 2252596 A	06-11-1997
			CA 2252882 A	06-11-1997
			EP 0900059 A	10-03-1999
			EP 0900060 A	10-03-1999
			EP 0907339 A	14-04-1999
			EP 0902666 A	24-03-1999
			EP 0927006 A	07-07-1999
			WO 9740780 A	06-11-1997
			WO 9740781 A	06-11-1997
			WO 9740782 A	06-11-1997
			WO 9740784 A	06-11-1999
			AU 6583998 A	20-10-1998
			AU 6584498 A	20-10-1998
			EP 0971644 A	19-01-2000
			WO 9842277 A	01-10-1998
			WO 9842278 A	01-10-1998
			AU 7259298 A	24-11-1998
			AU 7469098 A	24-11-1998
			WO 9848734 A	05-11-1998
			WO 9848735 A	05-11-1998
FR 2764794	A	24-12-1998	WO 9858600 A	30-12-1998
WO 9840035	A	17-09-1998	AU 6464298 A	29-09-1998
EP 0884029	A	16-12-1998	EP 0890346 A	13-01-1999
			JP 11128364 A	18-05-1999
EP 0928606	A	14-07-1999	AU 1006499 A	29-07-1999
			JP 11276598 A	12-10-1999

EPO FORM P0439

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82